

Controlling vineyard weeds

Each year the AWRI helpdesk receives queries about weed control strategies for vineyards and if there are effective alternatives to herbicides. Senior viticulturist at the AWRI **Tony Hoare** presents some of the options available and provides hints for selecting the most suitable weed control for different situations.



Some plants can cause more harm than good when they compete with vines for soil moisture and nutrients, interrupt vineyard machinery and operations, harbour vine pests, pose a fire risk or even cause taints in wines.

What are weeds and why should you control them?

A weed can be defined as a plant that is growing where it is not wanted, often in competition with cultivated plants. In vineyards it is common practice to use specific plant species to increase organic matter levels in soil, provide fodder for livestock, prevent soil erosion and even cool soil surfaces in summer. Some plants, however, can cause more harm than good when they compete with vines for soil moisture and nutrients, interrupt vineyard machinery and operations, harbour vine pests, pose a fire risk or even cause taints in wines. To manage

these weeds, there are a multitude of control options available. Choosing the right combination will allow you to avoid the weeds' negative effects while making the most of the benefits that plant biodiversity can bring to your vineyard.

What are the main options for weed control?

There is a wide variety of tools and practices that can be applied to control weeds in vineyards as alternatives to herbicides. Mechanical options for cultivation and mowing have been widely adopted and new technology is emerging. More novel options that

target weeds with steam, flame and high pressure water have also been explored. Mulches, biological controls and use of grazing animals can also play a role in holistic weed management. An obvious way to hinder weed growth is to avoid bare soil and reduce the opportunity for pest plants to become established by using competition plantings of preferable species in the midrow and undervine areas. This can be a permanent planting or an annual crop for rolling or mulching. There are many associated benefits to this passive approach and the weed suppression benefits of mulching can last for many years. ▶



What do I need to know before implementing a weed control strategy?

When selecting the most appropriate weed control measure for a particular vineyard there are a few key considerations. Soil type is important. Heavy soil types with high clay content, especially when wet, are prone to compaction from grazing sheep and cattle for weed control in winter. Cultivating soil to manage weeds can also damage the soil structure of heavy soils and lead to impervious soil layers and increased risk of soil erosion on sloping vineyards. Sandy soils are better suited to a cultivation approach as they are more resilient to both compaction and cultivation.

Detailed knowledge about the plants you want to control allows for a targeted approach to weed management which can maximise efficient use of resources. For instance, weeds such as couch grass,

evening primrose and Johnson grass do not lend themselves to grazing or mechanical cultivation as these options can make the infestation worse by spreading the weeds. Selective herbicides (organic or conventional) are more effective in controlling these weed species.

The timing of weed management is also very important. A feature of some weed species is that they have a rapid and short lifecycle from germination to seed. Controlling immature weeds before they set seed will not only be easier and more efficient with most forms of weed control, it will also reduce weed pressure in future years by disrupting seed production.

What is effective weed management?

Weeds are effectively managed when known pest species are not allowed to become established, and when there is a good understanding of the plant species present in the vineyard and their

attributes, both positive and negative. These plants should not be interfering with vineyard operations or having negative impacts on yield or quality. Overall, for weed management to be effective, the costs of controlling weeds need to be outweighed by the benefits.

Where can I find out more about weed control options?

A workshop on chemical-free undervine weed control will be held on 21 July at the 17th Australian Wine Industry Technical Conference in Adelaide. To register, or for more information, visit www.awitc.com.au. Other resources on weeds can be found in fact sheets and final reports on the Wine Australia website and in the SA Weed Control app produced by Primary Industries and Regions South Australia.

For more information on weed control or any other grapegrowing and winemaking technical matters, contact the AWRI helpdesk on helpdesk@awri.com.au or 08 8313 6600.

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